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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,910	04/12/2004	Masahiro Kobayashi		2453

7590 02/03/2005  
LORUSSO,LOUD & KELLY  
3137 Mount Vernon Avenue  
Alexandria, VA 22305

EXAMINER

LE, DANG D

ART UNIT PAPER NUMBER

2834

DATE MAILED: 02/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/821,910

Applicant(s)

KOBAYASHI ET AL.

Examiner

Dang D Le

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 1-5 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 4, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Baird (2,805,677) and Yundt et al. (6,433,536), individually.

Regarding claims 1, 4, and 5, Baird shows a variable reluctance resolver (Figures 1, 2, and 4) comprising:

- A rotor (34) and a stator (26) wherein the rotor includes a noncircular core of magnetic material, which is rotatably supported inside the stator with a gap therebetween, the shape of the rotor being such that the magnetic gap permeance varies according to a sine function of the rotational angle,
- Said noncircular core (34, 35) including a central circular portion (34) and a plurality of salient poles (35) protruding on the periphery of the central circular portion.

Art Unit: 2834

- Wherein each salient pole (35) of the rotor has a center which is offset by a prescribed offset distance in the radial direction from the center of the rotor, and the outer peripheral shape of each salient pole comprises by an arc of a circle of radius  $r$  which is centered on the center of the salient pole and which does not extend to the inner peripheral surface of the stator (See Figures 1 and 4).

Yundt et al. also shows all of the limitations of the claimed invention in claims 1, 4, and 5.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2834

6. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yundt et al.

Regarding claim 2, Yundt et al. discloses the claimed invention except for the radius  $R_r = A \cos(\phi) + \text{square root of } \{r^2 - A^2 \sin^2(\phi)\} = A \cos(\theta/N) + \text{square root of } \{r^2 - A^2 \sin^2(\theta/N)\}$ .

It would have been obvious to one having ordinary skill in the art at the time the invention was made to set the radius  $R_r = A \cos(\phi) + \text{square root of } \{r^2 - A^2 \sin^2(\phi)\} = A \cos(\theta/N) + \text{square root of } \{r^2 - A^2 \sin^2(\theta/N)\}$ , since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 3, Yundt et al. discloses the claimed invention except for the gap  $\delta = R_s - A \cos(\phi) - \text{square root of } \{r^2 - A^2 \sin^2(\phi)\} = R_s - A \cos(\theta/N) + \text{square root of } \{r^2 - A^2 \sin^2(\theta/N)\}$ .

It would have been obvious to one having ordinary skill in the art at the time the invention was made to set the gap  $\delta = R_s - A \cos(\phi) - \text{square root of } \{r^2 - A^2 \sin^2(\phi)\} = R_s - A \cos(\theta/N) + \text{square root of } \{r^2 - A^2 \sin^2(\theta/N)\}$ , since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

7. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baird.

Art Unit: 2834

Regarding claim 2, Baird discloses the claimed invention except for the radius  $R_r = A \cos(\phi) + \sqrt{r^2 - A^2 \sin^2(\phi)} = A \cos(\theta/N) + \sqrt{r^2 - A^2 \sin^2(\theta/N)}$ .

It would have been obvious to one having ordinary skill in the art at the time the invention was made to set the radius  $R_r = A \cos(\phi) + \sqrt{r^2 - A^2 \sin^2(\phi)} = A \cos(\theta/N) + \sqrt{r^2 - A^2 \sin^2(\theta/N)}$ , since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 3, Baird discloses the claimed invention except for the gap  $\delta = R_s - A \cos(\phi) - \sqrt{r^2 - A^2 \sin^2(\phi)} = R_s - A \cos(\theta/N) + \sqrt{r^2 - A^2 \sin^2(\theta/N)}$ .

It would have been obvious to one having ordinary skill in the art at the time the invention was made to set the gap  $\delta = R_s - A \cos(\phi) - \sqrt{r^2 - A^2 \sin^2(\phi)} = R_s - A \cos(\theta/N) + \sqrt{r^2 - A^2 \sin^2(\theta/N)}$ , since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Information on How to Contact USPTO***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (571) 272-2027. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2834

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

2/1/05

A handwritten signature in black ink, appearing to read "Dangle", with a stylized flourish at the end.

DANGLE  
PRIMARY EXAMINER